United States Patent

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[54] YIELDABLE SUPPORT

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[52] **U.S. Cl.** **248/145,** 267/150, 16/76

[51] **Int. Cl.** **F16f 1/06**

[58] **Field of Search** .....248/145, 226 E, 359, 360; 16/76; 267/150; 108/155

[56] **References Cited**

UNITED STATES PATENTS

2,522,983	9/1950	Bergstrom	248/145
2,770,832	11/1956	Martin	267/150

FOREIGN PATENTS OR APPLICATIONS

726,071	3/1955	Great Britain	16/76

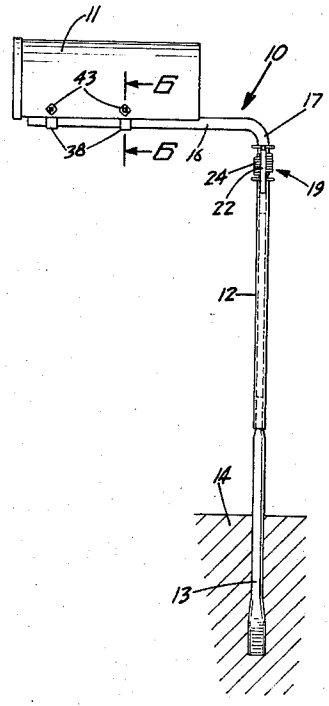
Primary Examiner—William H. Schultz

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[57] **ABSTRACT**

A stand for mailboxes, signs and like objects, having a generally upright stationary standard rotatably carrying a generally horizontal support. A pair of clamps attach a mailbox to the horizontal support. A coil torsion spring, concentric about a downwardly turned end of the support, coacts with a stop arm on the standard to yieldably hold the support in a selected position.

5 Claims, 6 Drawing Figures



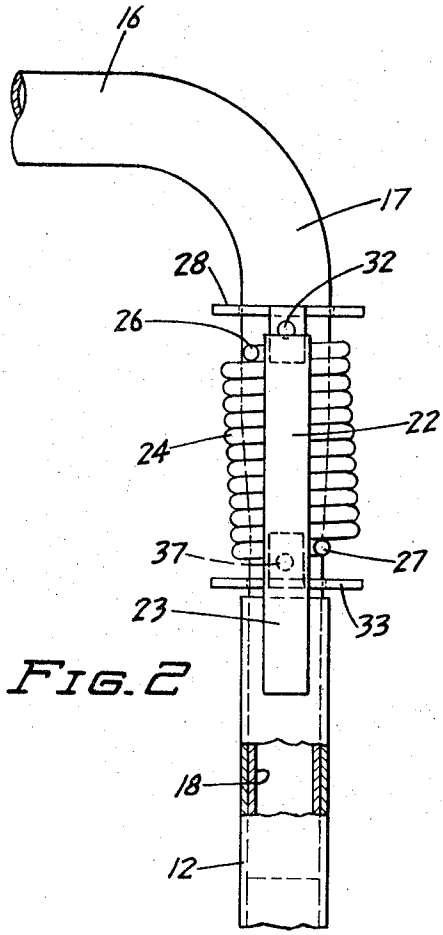


FIG. 2

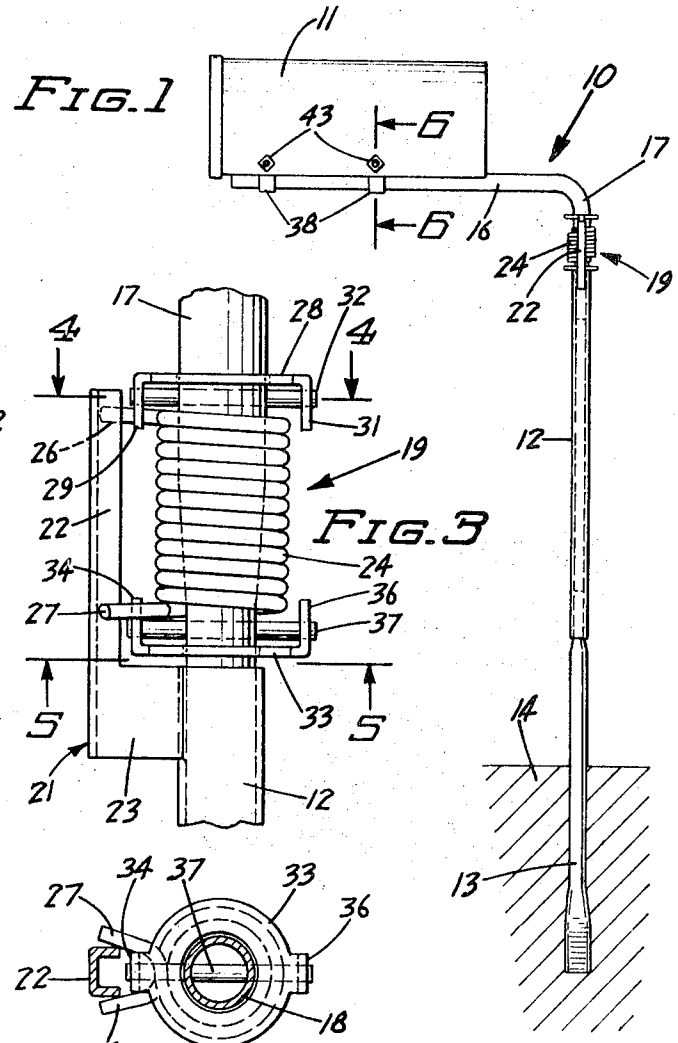


FIG. 1

FIG. 3

FIG. 5

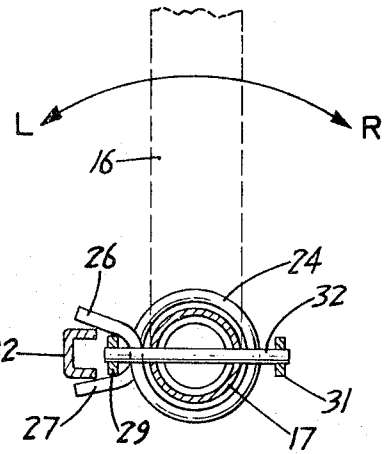


FIG. 4

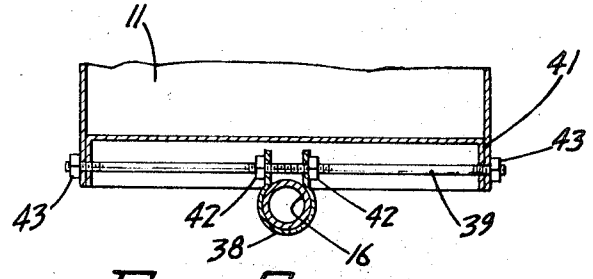


FIG. 6

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YIELDABLE SUPPORT

BACKGROUND OF INVENTION

The R.F.D. mailboxes are located on the side of the road in the direction of the travel of the carrier. The approach to the mailbox should be kept unobstructed and in snow country there should be a clearance beneath the mailbox for the snowplow, the road grader, and the mail carrier's vehicle fenders. Numerous types of stands have been devised to support a mailbox in the required position. A popular support is a swinging support which has angularly positioned telescopic members for connecting an upright standard with a horizontal support. The angularly positioned members permit the horizontal support to swing and return the support back to its generally horizontal outright position if it is accidentally hit by a snowplow or other vehicle. In some stands, telescopically related members are associated with springs for holding the box carrier member in an upright position. Examples of this type of mailbox support structure are shown in U.S. Pat. Nos. 1,508,052, 1,522,830, 2,522,983 and 2,936,143.

SUMMARY OF INVENTION

The invention relates to a support or stand for an object, as a sign, mailbox, newspaper box and like objects. The support comprises a pair of movably related members that carry coacting yieldable means to hold one member in a selected position relative to the other member. The coacting means include a stop secured to one member and a spring means operably associated with the other member. The spring means has a first portion engageable with one side of the stop and a second portion engageable with the other side of the stop, whereby the spring means yieldably holds the first member in the selected position. In this manner, the movement of the first member in either direction from the first position is against the yielding force of the spring means.

It is the object of the invention to provide a yieldable support which is simple in construction and effective in use for yieldably supporting a member in a selected position. Another object of the invention is to provide a swinging mailbox support with a coil torsion spring and stop arm coacting structure operable to yieldably hold the horizontal member in a generally outward direction. In the drawings:

FIG. 1 is a side elevational view of the stand of the invention carrying a mailbox;

FIG. 2 is an enlarged side view of the yielding coacting structure coupling the upright standard with the generally horizontal support;

FIG. 3 is a side elevational view of FIG. 2;

FIG. 4 is a sectional view taken along the line 4—4 of FIG. 3;

FIG. 5 is a sectional view taken along the line 5—5 of FIG. 3; and

FIG. 6 is an enlarged sectional view taken along the line 6—6 of FIG. 1.

Referring to the drawings, there is shown in FIG. 1 the stand of the invention, indicated generally at 10, carrying a mailbox 11. Other objects, as signs, newspaper boxes, gates and the like, can be supported on the stand.

Stand 10 has an upright standard or first member 12 having a lower end 13 anchored in the ground 14. The standard 12 can be anchored adjacent the shoulder of a road when the stand is used as a mailbox support. The standard 12 can comprise a plurality of interconnected members which have varying lengths to vary the overall height of the standard. Movably mounted on the upper end of the standard is a second member or support 16. The support 16 comprises a generally horizontal member having a downwardly turned or bent end 17. As shown in FIG. 2, the terminal section 18 of end 17 is slightly reduced in diameter and telescopes into the upper end of the standard 12, whereby the second member 16 can rotate about a generally upright axis of the support 12. Standard 12 and support 16 can be tubular members or pipes.

The rotation of the second member 16, relative to the support 12, is limited by a coacting yieldable assembly, indicated generally at 19, coupling the end 17 with the upper portion of the standard 12. A cover or boot (not shown) can be used to enclose the coacting yieldable assembly. The coacting yieldable assembly 19 comprises a stop, indicated generally at 21, secured to the standard 12. The stop 21 comprises an upwardly directed arm 22 extended generally parallel to the longitudinal axis of the standard 12 and a base 23 connecting the arm 22 with the top portion of standard 12. A torsion coil spring 24 is located concentrically about the end 17 adjacent the arm 22. Spring 24 has an upper end 26 located on one side of the stop 22 and a lower end 27 located adjacent the opposite side of the stop arm 22. The opposite locations of the spring ends 26 and 27, relative to the stop arm 22, are shown in FIGS. 2 to 5.

An annular collar 28 is positioned about the end 17 adjacent the upper end of the spring 24. Collar 28 has a pair of downwardly directed ears 29 and 31 for accommodating a transverse pin extended through suitable holes through the end 17. The ear 29 is located adjacent the end 26 of the spring so that upon rotation of the second member 16 in a clockwise direction, indicated R in FIG. 4, the spring 24 will be coiled by the movement of the ear 29 and thereby provide yielding resistance to the movement of the support 16 in the clockwise direction. The opposite end 27 of the spring 24 will anchor on the stop arm 22 whereby the full length of the spring 24 is used as a yielding or biasing means acting on the support 16. Upon release of the force applied to the support 16, the spring 24 will bias the support 16 back to its generally outright position, as shown in FIG. 1.

Located adjacent the lower end of spring 24 is a second collar 33 positioned about the terminal section 18 of the support 16. Collar 33 has a pair of diametrically located upwardly directed ears 34 and 36 for accommodating a transverse pin 37. Pin 37 extends through suitable holes in the terminal section 18 and thereby fixedly mounts the collar to the terminal section 18. The ear 34 is positioned adjacent the end 37 so that upon rotation of the support 16 in the counterclockwise direction, indicated L in FIG. 4, the ear 34 will move the spring end 27, thereby contracting the spring 24 and establishing a yielding force against the movement of the support 16. Upon release of force applied to the support 16, it will return to its normal outward position. The opposite end 26 of the spring 24 will anchor on the stop arm 22 so that the full length of the spring 24 is utilized as a yielding or biasing means acting on the support 16.

The mailbox 11 is attached to the support 16 with a pair of clamps 38. As shown in FIG. 6, clamp 38 is positioned about the support 16 and accommodates a transverse bolt 39. A pair of nuts 43, threaded on the bolt, engage the clamp 38 to fix the position of the clamp on the support 16. The bolt 39 extends in opposite outward directions through suitable holes in the base 41 of the mailbox. Nuts 43 are used to secure the mailbox base 41 to the bolt 39. The clamps can be adjusted along the length of the support 16 to accommodate different size mailboxes and locate the mailbox along the length of the support 16. Other types of fastening structure can be used to connect the mailbox or other objects to the support 16.

In use, the coating yieldable assembly 19 functions as a coupling between the stationary member or standard 12 and the movable support 16. The stop arm, being longitudinally aligned with the axis of rotation of the movable member 16, permits the terminal section 18 to be telescoped into the top end of the standard 12 without the adjustment or removal of any parts. The arm 22 fits between the circumferentially spaced ends 26 and 27 of the torsion spring 24. The ears 29 and 34 on the collars 28 and 33, respectively, maintain the circumferential spaced positions of the spring ends 26 and 27 so that there is always sufficient space for the stop arm 22.

The torsion coil spring 24 cooperates with the stop arm 22 and the collars 28 and 33 to provide a yieldable coupling between the standard 12 and the support 16. The ends 26 and

27 of the springs selectively cooperate with opposite sides of the stop arm 22 to anchor the spring. The ears 29 and 34 selectively drive the opposite ends of the spring in accordance with the direction of movement of the support 16. Regardless of the amount or direction of the support 16, the spring 24 will return the support back to its initial position.

While there has been shown and described a preferred embodiment of this invention, it is understood that various changes, modifications, and substitutions can be made by one skilled in the art without departing from the spirit of the invention. For example, the standard 12 and support 16 can be tubular pipe members of metal, plastic or similar rigid material. The entire stand can be treated to prevent rust and corrosion or coated with paint, plastic material and the like.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A stand for an object comprising: a vertical tubular stationary member, a generally horizontal movable member having a downwardly directed end, said downwardly directed end located in axial alignment with and rotatably mounted on the stationary member, means for connecting the object to the movable member, coacting means for yieldably holding the movable member in a selected position relative to the stationary member comprising a stop arm and spring means, said stop arm secured to the stationary member and extended substantially parallel to the longitudinal axis of the stationary member to a position adjacent the spring means, said spring means including a coil torsion spring positioned concentrically about the movable member having an upper end engageable with one side of the stop arm and lower end engageable with the opposite side of the stop, an upper collar surrounding the movable member and engageable with the upper end of the spring upon rotation of the movable member, first pin means extended transversely through the downwardly directed end of the movable member and connected to the upper collar to secure the upper collar to the movable member, a lower collar surrounding the movable member engageable with the lower end of the spring upon rotation of the movable member in the opposite direction, and second pin means extended transversely through the downwardly directed end of the movable member and connected to the lower collar to secure the lower collar to the movable member.

2. The stand of claim 1 wherein: the stationary member and the movable member have telescopically related portions.

3. The stand of claim 1 wherein: said means connecting the object to the movable member comprise clamp means on the movable member operable to attach the object to the movable member.

4. A yieldable coupling comprising: a stationary member, a movable member having an end portion in axial alignment with and rotatably mounted to the stationary member, coacting means on the stationary member and the movable member for yieldably holding the movable member in a selected position relative to the stationary member, said coacting means comprising a stop arm secured to the stationary member and spring means operably associated with said end portion of the movable member, said stop arm extending substantially parallel to the longitudinal axis of the stationary member to a position adjacent the spring means, said spring means including a coil torsion spring positioned concentrically about the movable member having one end engageable with one side of the stop arm and a second end engageable with the opposite side of the stop arm, a first collar surrounding the movable member engageable with the one end of the spring upon rotation of the movable member, first pin means extended transversely through the end portion of the movable member and connected to the first collar to secure the first collar to the end portion, a second collar surrounding the movable member engageable with the second end of the spring upon rotation of the movable member in the opposite direction, and second pin means extended transversely through the end portion of the movable member and connected to the second collar to secure the second collar to the end portion.

5. The coupling of claim 4 wherein: the stationary member and movable member have telescopically related portions.

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